

MATYUKOVA, T.G.

Characeae of Lake Issyk-Kul'. Uch. zap. Biol.-pochv. fak. Kir.
un. no.7:131-143 '58. (MIRA 15:10)
(Issyk-Kul'—Characeae)

MATYUNICHEV, N.

We are searching for additional potentialities. Mer. flot 24
no.12:12-13 D '64. (MIRA 12:8)

1. Starshiy shturman i rukovoditel' gruppy ekonomicheskogo
analiza teplokhoda "Dagestan".

BOYKO, M. A., Geroy Sotsialisticheskogo Truda, pochetnyy metallurg;
MATYUNIN, A.

Two destinies. Metallurg 7 no.11:34-36 N '62.

(MIRA 15:10)

1. Zavod "Serp i molot" (for Matyunin).

(Iron and steel workers)

KOVALEV, V.F.; MATYUNIN, A.A.; CHUMACHENKO, G.M.

Repairing the lining of water-cooled pipes of a ring furnace.
Sbor.rats.predl.vnedr.v proisv. no.5:36-37 '60. (MIRA 14:8)

1. Pervoural'skiy Novotrubnyy zavod.
(Furnaces—Maintenance and repair)

L 29717-66

EWI(1)/EWI(m)/ETC(f)/T RM/WW/JW/WE

ACC NR: AP6010200

SOURCE CODE: UR/0201/66/000/001/0015/0018

AUTHOR: Bubnov, V. P.; Matyunin, A. M.; Nesterenko, V. B.

ORG: Nuclear Power Institute AN BSSR (Institut yadernoy energetiki AN BSSR)

TITLE: Thermodynamic analysis of cycles using chemically dissociating gases as a working body

SOURCE: AN BSSR. Vesti. Seryya fizika-tekhnichnykh nauk, no. 1, 1966, 15-18

TOPIC TAGS: thermodynamic analysis, chemical reaction, gas turbine, nitrogen oxide

ABSTRACT: The article gives a thermodynamic analysis of a cycle with compression in the liquid phase (gas-liquid cycle) using a chemically reacting gas as the working body in a turbine. The investigation was based on nitrogen tetroxide since more data are available on its properties. The article gives a schematic diagram of the turbine cycle. The calculations show that use of chemically dissociating gases as working bodies in the range of temperatures and pressures considered ($T = 823-1023^{\circ}\text{K}$, $P = 40-90 \text{ atm}$) makes it possible to achieve efficiencies for the cycle which range from 32 to 49% of the absolute

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ACC NR: AP6010200

values. Using reacting gases as the working body, an increase in the initial temperature and pressure parameters results in an increase in the efficiency coefficient; this cannot be said in regard to cycles employing steam as the working body. The article concludes that the use of such dissociating gases shows great industrial promise and is worthy of further theoretical and experimental investigation. "The authors of the article express their thanks to Academician A. K. Krasin of the AN BSSR for proposing the subject of the investigation and for his interest in the work." Orig. art. has: 5 figures.

SUB CODE: 20,07 / SUBM DATE: 29Sep65 / ORIG REF: 003 / OTH REF: 001

Cord 2/2 CC

MATYUIN

HUDNEVSKIY, N.K.; MATYUIN, A.I.; OBUKHOVA, Ye.S.

Investigation of copper-nickel alloy components entering into the
gas cloud surrounding the arc. Izv. AN SSSR. Ser. fiz. 19 no.1:
125-126 Ja-F '55. (MIRA 8:9)

1. Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosu-
darstvennom universitete.

(Spectrum analysis) (Spectrometer)

MATYUNIN, B.

Device for measuring resistors. Radio no. 2:49-50 F '63.

(MIRA 16:2)

(Electric resistors--Measurement)

MATYUNIN, B.I.

Seminar on the revision and recalculation of specifications.
Standartizatsiia 27 no.2:53-54 F '63. (MIRA 16:4)

(Ul'yanovsk—Standardization)

MATYUNIN, I.P.; ZAKHAROV, P.F.; KOZLOV, N.D.; LEVIN, P.D., redaktor

[What the automobile driver must know] Chto neobkhodimo poznit' vladel'tsu avtomobilu. [Moskva] Izd-vo "Moskovskaya pravda," 1956. 49 p. (MIRA 10:3)

1. Moscow. Otdel regulirovaniya ulichnogo dvizheniya. 2. Otdel regulirovaniya ulichnogo dvizheniya Upravleniya Ministerstva vnutrennikh del gor. Moskvy (fr. Matyunin, Zakharov, Kozlov) (Automobile drivers)

MATYUNIN, M. V.

USSR/Electricity - Literature,
Transmission Lines

Apr 53

"Review of Book 'Operation of Overhead Electric Power Transmission Lines',"

Engr M. V. Matyunin

Elektr. Stantsii, No 4, pp 63-64

Book ~~being~~ reviewed ("Eksplanatsiya vozdukhnykh liniy elektroperedachi",
ed by I. A. Syromyatnikov, 240 pp, Gosenergoizdat, 1952) is symposium of
articles and papers by representatives of ministries, power systems, sci
res organizations, and reports delivered at Sep, 1950, Sci and Tech Session
of VNITOE at Rostov-on-Don. Materials cover wide range of topics in field
(operating experience, research, equipment, etc.).

105 T10

MATYUNIN, V., polkovnik

Group exercise with platoon commanders. Voen. vest. 40
no. 11:38-42 '60. (MIRA 14:11)
(Attack and defense (Military science))

RUDIN, Ya.M., bogermeyster-nastavnik; MATYUNIN, V.G.

Working rock with a multibucket suction dredge. Transp. stroi.
15 no.1:20-23 Ja '65. (MIRA 18:3)

1. Nachal'nik zemlecherpatel'nogo karavana "Volkhov" (for
M tyunin).

MATYUNIN, V.G., inzh.; KAZIYEV, K.G., inzh.

Push conveyors used in cable plants. Mekh. i avtom.proizv. 19
no.2:21-23 F '65. (MIRA 18:3)

MATYONIN, V.M.:

[Tables indicating the percentage of moisture content in grain products determined by a method utilizing preliminary partial drying] Tablitsy protsentnogo soderzhanija vlazhnosti v khleboproduktakh, opredeliaemogo metodom s predvaritel'nyim podsuшивaniem. Moskva, Izd-vo tekhn. i ekon. lit-ry po voprosam mukomol'no-krupianoi, kombikormovoi promyshl. i elevatorno-skladskogo khoziaistva- Khleboizdat, 1956. 71 p. (MIRA 10:6)
(Grain--Tables and ready reckoners)

POPOV, I.I.; VORONIN, P.A.; MATYUNIN, V.S.

Method of testing in mines of coal mining explosives for a
tendency to burn out. Vzyv. delo no.52/9:217-221 '63.
(MIRA 17:12)

1. Makeyevskiy nauchno-issledovatel'skiy institut po bezopasnosti
truda v gornoy promyshlennosti.

U 27380-66 EWI(m)/EWA(d)/EWP(v)/T/EWP(i)/ETI/EWP(k) 1JP(g) TO ADM/JH
ACC NR: AP6015242 (A) SOURCE CODE: UR/0125/66/000/005/0016/0019

AUTHOR: Kiselev, S. N. (Moscow); Khovarov, V. A. (Moscow); Malyukov, V. A. (Moscow);
Skornyakov, L. M. (Moscow); Matyunina, A. T. (Moscow)

ORG: none

TITLE: Mechanical properties of heavy welded avial-type alloy specimens

SOURCE: Avtomaticheskaya svarka, no. 5, 1966, 16-19

TOPIC TAGS: aluminum alloy, alloy weld, weld property, avial alloy

ABSTRACT: The effect of the size factor on the mechanical properties of heat-treatable avial-type aluminum-base alloy (0.74—0.90% Si, 0.59—0.70% Mg) welds and base metal has been studied. Specimens 10x10x100, 30x30x450, 40x40x500, 60x60x600, and 120x120x1000 mm (respective size factors 1, 3, 4, 6 and 12) were made from plates 40, 70, 90, 220 and 330 mm thick. Welding was done with a consumable SvAK-5 electrode in an argon-helium atmosphere. The base metal in the heat-treated condition (annealing and aging) had a tensile strength of 20—25 kg/mm², a yield strength of 10—14 kg/mm², and an elongation of 20—25%; corresponding figures for welded specimens were 16—19 kg/mm², 8—10 kg/mm², and 10—12%. Fracture in most cases was in the weld. Bend tests (on specimens with the Charpy-type notch) showed that with increasing size factor, the bend angle (measured at the appearance of the first crack)

Card 1/2 UDC: 621.791.053:620.172

35
B

ACC NR: AP6015242

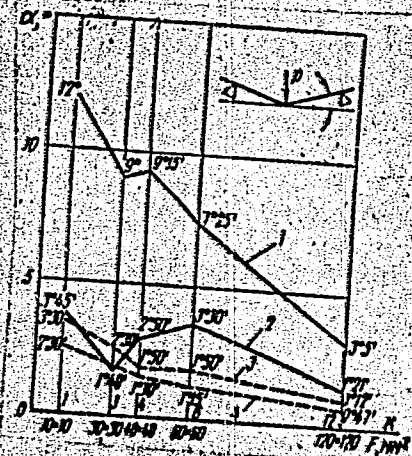


Fig. 1. Effect of the size factor on the bend angle of avial-type alloy base metal in the heat-treated condition (1) and aged at 130C for 200 hr (2); and in as-welded alloy welds (3) aged at 130C for 200 hr (4).

dropped. The values of bend angle in welded specimens were much lower than in base metal (see Fig. 1). Aging at 100 C for 1000 hr brings about a further drop in the ductility of welded specimens. After this treatment they failed in a brittle manner. Orig. art. has: 5 figures and 3 tables. [AZ]

SUB CODE: 11, 13/ SUBM DATE: 25May65/ ORIG REF: 005/ ATD PRESS: 4259

Card 2/2

KOBILYATSKIY, V.G., inzh.; MATYURIN, L.I., inzh.

Automatic melting shop. Mekh. 1 avtom. proizv. 18 no.6;
1-3 Je '64. (MIRA 17:9)

MATYURIN, P.

Study technological production processes. Pozh. delo 5 no.2:5 P '59.
(MIRA 12:3)

1. Nachal'nik pozharney chasti, g. Kuybyshev.
(Kuybyshev--Factories--Fires and fire prevention)

MATYURINA, Z.A.

Ring test in examining milk for brucellosis; author's abstract. *Zh. mikro-*
biol. epid. i imm. no. 9:54-55 S '53. (MIRA 6:11)

1. Leningradskaya oblastnaya protivobrutselesnaya stantsiya.
(Brucellosis) (Milk--Analysis and examination)

MATYUS, E.

ZADOR, L.; MATYUS, E.

Streptomycin concentration in the tuberculous kidney. *Magy. sebesset*
6 no.3:201-203 Aug 1953. (CINL 25:5)

1. Doctors. 2. Urological Clinic (Director -- Prof. Dr. Antal
Babics, Academician) of Budapest University.

RENYI-VAMOS, F.; MAGASI, P.; MATYUS, E.

Histamine content of hydronephrotic kidneys and its significance
for pathophysiology of the disease. Acta med. hung. 6 no.1-2:
1-11 1954.

1. Urologische Klinik der Medizinischen Universität, Budapest.
(HYDRONEPHROSIS, exper.
off. on renal histamine content in rabbits)
(HISTAMINE, metab.
kidneys in exper. hydronephrosis in rabbits)
(KIDNEYS, metab.
histamine in exper. hydronephrosis in rabbits)

BALOGH, Ferenc, dr.; MATYUS, Endre, dr.

Testicular tumors. Magy. sebesset 8 no.209-272:253-261
Aug 55.

1. A Budapesti Orvostudományi Egyetem Urológiai Klinikájának
közleménye. (Igazgató: Dr. Babics, Antal egyet. tanár,
akadémikus.

(TESTES, neoplasms
clin. aspects.)

MATYUS, Endre, Dr.

Ureter injuries in surgery of the small pelvis. Orv. hetil. 99 no.50:
1738-1741 14 Dec 58.

1. A Budapesti Orvostudományi Egyetem Urológiai Klinikájának (igazgató:
Babics Antal dr. egyet. tanár, akadémikus) közleménye.
(PELVIS, surg.

compl., ureter inj. in surg. of true pelvis (Hun))
(URETERS, wds. & inj.
in surg. of true pelvis (Hun))

ADAM, Gyorgy; BODANSZKY, Hedvig; MATYUS, Endre; MESZAROS, Istvan;
NAGY, Klara

On compensatory activity of the afferent system of the kidney
pelvis. Kiserletes Orvostud. 11 no.5:507-510 0 '59.

1. Budapesti Orvostudományi Egyetem Elettani Intézete és
Urológiai Klinikája.

(KIDNEY PELVIS physiol)

MATYUS, Endre, dr.; CSATA, Sandor, dr.; FRANG, Dezso, dr.

On nephro-ptosis. Orv.hetil. 100 no.46:1649-1654 E '59.

1. A Budapesti Orvostudományi Egyetem Urológiai Klinikájának
(igazgató: Babics Antal dr. egyetemi tanár, akadémikus)
közleménye.

(KIDNEYS abnorm)

MATYUS, Endre, dr.; JELLINEK, Harry, dr.

Hematuria as a misleading symptom in extrarenal tumor. Magy.
sebeszet 13 no.5:326-329 0 '60.

1. A Budapesti Orvostudományi Egyetem Urológiai Klinikájának
(Igazgató: Dr. Babics Antal egy. tanár) és II. sz. Kóronctani
Intézetének (Igazgató: Dr. Haranghy László egy. tanár) közleménye.
(HEMATURIA diagnosis)
(NEOPLASMS diagnosis)

MATYUS, Endre

Artificial kidney. Borsod szemle 5 no.5:548-550 '61.

MATYUS, E.

Surgical treatment of lesions of the ureter in the true pelvis.
Acta chir. Acad Sci Hung 2 no.1:73-82 '61.

1. Urologische Klinik der Medizinischen Universität, Budapest.
(URETERS surg)

MATYUS, Endre, dr.; CSATA, Sandor, dr.; FRANK, Dezso, dr.

Vascular anomalies of the kidney. Orv.hetil. 102 no.6:254-258
5 P'61.

1. Budapesti Orvostudományi Egyetem, Urológiai Klinika.
(KIDNEYS blood supply)

MATYUS, E.; CSATA, G.; FRANG, D.

On anomalous renal blood vessels. Acta chir. Acad. Sci. Hung. 3 no.2/3:
207-214 '62.

1. Urologische Klinik (Direktor: Prof. Dr. A. Babics) der Medizinischen
Universität Budapest.

(KIDNEY blood supply)

MATYUS, Endre, dr.; KISS, Geza, dr.; SZOMOR, Laszlo, dr.

Repeated surgery of bilateral hydronephrosis and hydroureter.
Orv. hetil. 106 no.38:1803-1805 19 S '65.

1. Miskolci Varosi Tanacs V.B. Megyel-Varosi Korhaz, Szent-
peteri kapu, Urolgiai Osztaly (foorvos: Matyus, Endre, dr.).

HUNGARY

MATYUS, Dr. Endre, and VARADI, Dr Erno, Department of Urology
(Urológiai Osztály)(Chief Physician: Dr Endre MATYUS) of the Miskolc City
Council Mixed Committee Municipal-Megye Hospital (Miskolci Városi Tanács
VB Városi-Megyei Kórháza)(Director: Dr Istvan SZABO).

"An Operated and Cured Case of Hirsutism Caused by Adenoma of the Adrenal
Cortex"

Budapest, Magyar Sebészeti, Vol 19, No 3, Jun 66; pp 199-202.

Abstract: A case of operated and cured hirsutism caused by a benign adenoma
of the adrenal cortex is described. The histological picture showed
predominantly details reminding of the zona glomerulosa and fasciculata.
(No References).

1/1

MATYUS, J.

" Sultry Conditions of the Hungarian Climate". p.90, (IDOJARS, Vol. 57,
No.2, Mar./ Apr. 1953, Budapest, Hungary).

SO: Monthly List of East European Accessions, L. C., Vol.2, No.11, Nov. 1953
Uncl.

MATYUS, J.

The conditions of the severity of the climate of Budapest.

p. 45. (FOLDRAJZI ERTESITO) Vol. 6, No. 1, 1957
Budapest, Hungary

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3,
March 1958

MATTUS, J.

Coordinated investigation of temperature and wind on the earth. p. 55.

FOLIRAJZI ERTESITO. (Magyar Tudományos Akadémia. Foldrajztudományi Kutatócsoport)
Budapest, Hungary. Vol. 8, no. 1, 1959.

Monthly list of East European Accessions (EEAI), IC, Vol. 8, no. 7, July 1959
uncla.

MESZAROS, K.; SZENTGALI, F.; MATYUS, L.

Early ambulation of patients in surgery. Orv. hatil. 93 no. 37:
1058-1062 14 Sept 1952. (CIHL 23:5)

1. Doctors. 2. Surgical Department (Head Physician -- Dr. Karoly Meszaros), Tetenyi-uti Metropolitan General Hospital (Director - Head Physician -- Dr. Pal Zellner).

MATYUS, Lajos, Dr.

FRIED, László, Dr.; MATYUS, Lajos, Dr.

Isolated spleen tuberculosis. Orv. hetil. 99 no.12:411-414 28 Mar 58.

1. A Novarosi Tetenyi uti Korház (igazgató: Zellner Pál dr. főorvos)
Röntgenosztályának (főorvos: Deák Pál) és Sebészeti Osztályának
(főorvos: Mezős Károly dr.) közleménye.
(TUBERCULOSIS, SPLENIC, case reports
(Hun))

901 188

MATHEU, Lajos, MD: Capital City Tertiary Ave Hospital (Fovarosi
Terapias uti kórház).

Spontaneous Liver Rupture.

Emberasz, Orvosi Hetilap, Vol 104, No 6, 1. Jan 1964, pages 206-208.

Abstract: [Author's summary] The spontaneous liver rupture
of a 57-year-old male patient is described with recovery after
tamponade. The authors suspect a hemangioma rupture. A survey of
the diseases is given which can result in spontaneous liver rupture.
[Continued, Eastern European references]

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MATYUS, Lajos, dr.; BODNAR, Endre, dr.; LITTMANN, Imre, dr.; PETER, Marton, dr.

Aneurysm of the splenic artery ruptured into the gastrointestinal tract. Orv. hetil. 105 no.37:1759-1761 13 S '64.

1. Fovarosí Tetenyi uti Korház, I Sebészeti Osztály.

BRANDSTEIN, Laszlo, dr.; MATYUS, Lajos, dr.; LITTMANN, Imre, dr.

Active surgical treatment of phlegmasia cerulea dolens.
(Thrombectomy). Orv. hetil. 106 no.7:800-801 25 Ap'65.

1. Orvostove'bbkepzo Intezet, Sebészeti Tanszek (tanszek-
vezeto: Littmann, Imre, dr).

HUNGARY

HERCZEG, Tibor, Dr, BRANDSTEIN, Laszlo, Dr, MATYUS, Lajos, Dr; Institute of Postgraduate Medical Education, Department of Surgery (chairman: LITTMANN, Imre, Dr, professor) (Orvostovabbkepzo Intezet, Sebeszeti Tanszek), Budapest.

"Experiences in the Course of Treatment of 252 Cases of Abdominal Injury."

Budapest, Magyar Traumatologia, Orthopaedia es Helyreallito Sebeszet, Vol IX, No 4, 1966, pages 271-279.

Abstract: [Authors' English summary modified] Based on the analysis of 252 cases involving abdominal injuries, seen over a 10 year period, the actual problems of preoperative and intraoperative diagnosis and treatment are discussed. The problems of prevention of complications are similarly dealt with. It is stressed that, in addition to the extent of injury and the organs involved, the outcome of treatment depends greatly on the prompt hospitalization of the injured. In addition to a careful clinical observation and rapid intervention, the importance of painstaking intraoperative diagnosis is pointed out. This is based on the elucidation of the causal relations between the pathologic changes and the clinical symptoms. Additional improvement in the results achieved in abdominal traumatology can only be expected when the above mentioned prerequisites are strictly observed. 16 Hungarian, 13 Western references.

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HUNGARY

BRANDSTEIN, Laszlo, Dr. BUCSINA, Oliver, Dr. HENCZEG, Tibor, Dr. KUN, Miklos.
Dr. LANYI, Ferenc, Dr. LITTFANK, Imre, Dr. MATYUS, Lajos, Dr; Institute of
Postgraduate Medical Education, I. and II. Departments of Surgery (Orvos-
tovabbkepzo Intezet, I. es II. Sebészeti Tanszek), Budapest.

"Modern Machine Suture in Operations on the Digestive Tract."

Budapest, Orvosi Hetilap, Vol 107, No 42, 16 Oct 66, pages 1984-1986.

Abstract: [Authors' Hungarian summary] In the authors' opinion, the
new Soviet suturing machines represent a great advance in surgery involving
the digestive tract. The mode of application of the machines and the ex-
periences in the course of 206 cases involving machine suturing are described
and, on the basis of these experiences, the widespread use of these machines
is recommended. 2 Russian, 1 Western references.

HANGOS, Gy.; MATYUS, L.; LOBLOVICS, I.

Ileocecostomy. Acta chir. acad. sci. Hung. 6 no.2:183-186 '65.

1. Lehrstuhl fuer Chirurgie (Direktor: Prof. Dr. I. Littmann),
Institut fuer Aerztliche Fortbildung, Budapest.

DOROSHEVICH, M.M.; MATYUSH, A.M.

Improving the power factor by means of induction capacitors.
Trudy Inst.energ.AN BSSR no.1:82-87 '54. (MLRA 9:8)
(Condensers (Electricity))

MATYUSH, A.N., inzh.

Use of saturable magnetic elements in longitudinal differential protective gear for electric transmission lines. Izv.vys.ucheb. zav.; energ. 2 no.8:22-28 Ag '59. (MIRA 13:2)

1. Institut energetiki AN BSSR.
(Electric lines---Overhead)

MATTUSH, A.N.

Contemporary circuits for longitudinal differential protection of electric transmission lines. Trudy Inst.energ.
AN BSSR no.10:98-103 '59. (MIRA 13:6)
(Electric lines) (Electric protection)

VARANKIN, Yu.V., red.; VOLKOV, N.P., red.; KASATKIN, I.I., red.;
KRASNOVSKIY, A.Z., red.; ~~MATYUSH, A.N., red.~~; NOVASH, V.I.,
red.; PEKELIS, G.B., red.; RATSIEVICH, V.O., red.; DOLGIY,
V.Ya., red.

[Electric power plants and networks; exchange of technical
and work experience] Elektrostantsii i seti; obmen proizvod-
stvenno-tekhnicheskim opytom. Minsk, 1962. 87 p.

(MIRA 17:6)

1. Nauchno-tekhnicheskoye obshchestvo energeticheskoy pro-
myshlennosti. Belorusskoye respublikanskoye otdeleniye.

GRIGOR'YEV, Georgiy Leonidovich; GRUSEVICH, Stanislav Iosifovich; MATYUSH,
B.I., otvetstvennyy red.; BALAKIREV, A.F., red.; PIRSOVA, A.G.,
tekhn.red.

[Full-anatomic testing apparatus for testing selectors of modernized
ten-step systems] Polnoavtomaticheskaya ispytatel'naya apparatura
dlya proverki iskatel' modernizirovannoi dekadno-shagovoi ATS.
Moskva, Gos. izd-vo lit-ry po vopr. svyazi i radio, 1957. 49 p.

(MIRA 11:4)

(Telephone, Automatic--Apparatus and supplies)

FARAFONOV, Leonid Stepanovich; MATYUSH, B.I. — otv.red.; RYAZANTSEVA, N.M.,
red.; MARKOGH, K.G., tekhn.red.

[Automatic telephone exchanges of district centers (ATS 100/500)]
ATS raionnogo tsentra (ATS 100/500). Moskva, Gos.izd-vo lit-ry
po voprosam svyazi i radio, 1960. 35 p.

(MIRA 14:3)

(Telephone, Automatic)

ROYTENBERG, Yefim Mikhaylovich; KHARKEVICH, Anatoliy Dem'yanovich;
MATYUSH, B.I., otv.red.; RYAZANTSEVA, M.M., red.; KARABILOVA,
S.P., tekhn.red.

[Crossbar trunk and its use in designing selection units on
automatic telephone exchanges] Koordinatnyi soedinitel' i ego
ispol'zovanie pri postroenii blokov iskanii na ATS. Moskva,
Gos.isd-vo lit-ry po voprosam svyazi i radio, 1960. 47 p.
(MIRA 13:10)

(Telephone, Automatic)

STABNIKOV, V.N.; YEGOROV, A.S.; VISNEVSKAYA, G.I.; MATYUSHA, A.G.

Efficiency coefficients of bubble-cap plates in the concentration
section of purifying columns. Spirt.prom. 27 no.3:7-10 '61.

(MIRA 14:4)

(Plate towers)

MATYUSHA, A.G.; YEGOROV, A.S.; PETROVSKAYA, M.V.

Investigating alcohol losses and impurities in the return of the
ether-aldehyde fraction to the production in molasses distilleries.
Trudy Ukr.NIISP no.8:48-59 '63. (MIRA 17:3)

MATYUSHA, A.G.; YEGOROV, A.S.; PETROVSKAYA, M.V.

Studying the balance of esters, aldehydes and acids in the
fractional distillation of molasses alcohol. Trudy UkrNIISP
no.9:44-50 '64. (MIRA 17:10)

ACC NR: AP7011820

SOURCE CODE: UR'0079/66'036/012'2215/2217

AUTHOR: Derkach, G. I.; Gubnitskaya, Ye. S.; Kolotilo, M. V.; Matyusha, A. G.

ORG: Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR
(Institut organicheskoy khimii AN UkrSSR)

TITLE: Reaction of isocyanatophosphites with alkyl halides, N-chloro compounds, and azides

SOURCE: Zhurnal obshchey khimii, v. 36, no. 12, 1966, 2215-2217

TOPIC TAGS: organic isocyanate compound, azide, chlorinated organic compound, organic azine compound

SUB CODE: 07

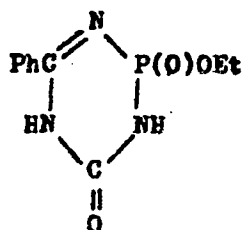
ABSTRACT: The alkyl esters of isocyanato- and diisocyanatophosphorous acids react readily with alkyl halides, N-chloroamines, acid N-chloroamides, and N-chloro-iminoesters with an Arbuzov rearrangement, forming derivatives of isocyanatophosphonic (I) or amidophosphoric acids (II). The compounds $\text{EtPO}(\text{NCO})(\text{OEt})$, $m\text{-O}_2\text{NC}_6\text{H}_4\text{CON}=\text{P}(\text{NCO})(\text{OEt})_2$ (liquid), and $m\text{-O}_2\text{NC}_6\text{H}_4\text{CONHPO}(\text{OEt})\text{NHCONHPh}$ were synthesized in this manner. The interaction of N-chloroamidines with isocyanates of trivalent P led to phosphatriazines, of which

Cord 1/2

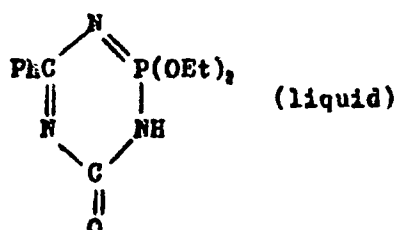
UDC: 547.558+547.583.7

2233-0106

ACC NR: AP7011820



and



were prepared. Alkyl azides, aryl azides, and azides of carboxylic, phosphoric, and sulfo acids reacted with phosphorous acid isocyanates with the formation of isocyanatophosphazo compounds: $\text{RN}_3 + \text{R}'_n \text{P(NCO)}_{3-n} \rightarrow \text{N}_2 + \text{RN=PR}'_n (\text{NCO})_{3-n}$ (III)

$\text{R}' = \text{AlkO}, \text{ArO}, \text{AlkS}, \text{ArS}, \text{NR}_2; n = 1, 2$

Compounds I-III reacted readily with alcohols, phenols, amines, or other compounds containing active H or metal atoms, forming the corresponding phosphorylated urethanes or ureas. The constitution of the P isocyanates and their derivatives was established on the basis of IR spectra, chemical reactions, and analytical data. Orig. art. has: 3 formulas and 1 table. [JPRS: 40,351]

Card 2/2

15 (2)
AUTHORS:

Gol'denberg, L. G., Levina, A. P.,
Matyusha, S. I.

S/072/60/000/02/001/021
B015/B003

TITLE:

Experience in the Introduction of Tank Furnaces With
Direct Heating

PERIODICAL:

Steklo i keramika, 1960, Nr 2, pp 1 - 5 (USSR)

ABSTRACT:

In the present paper the authors describe two tank furnaces of this type designed by the Nauchno-issledovatel'skiy institut elektrotekhnicheskogo stekla (NIIES Scientific Research Institute for Electrotechnical Glass) and installed in the Saratov works in 1957-1958 for the manual processing of borosilicate glass. S. L. Rassadin participated in the design of the first furnace. N. S. Snezhinskiy and N. V. Filimonovich constructed the latter. Figure 1 shows the tank of the first furnace, and figures 2 and 3 show both burner types. The first burner type was designed by B. G. Lukin, the second burner is a standard construction of the "Stal'proyekt". Figure 4 shows the metal recuperator. Compressed air is produced by means of a BK-6 ventilator made by the Zagorskiy zavod sel'skokhozyaystvennogo

Card 1/2

Experience Made: the Introduction of Tank
Furnaces With Direct Heating

S/072/60/000/02/001/021
B015/B003

mashinostroyeniya (Zagorsk Works for Agricultural Machine Construction). Yu. A. Gastev, L. V. Potemkina, Ye. I. Usova, and N. V. Filimonovich, collaborators of NIIES, as well as M. M. Lagranskiy, V. N. Morozov, S. G. Ponomarev, and V. V. Tyurin, collaborators of the afore-mentioned works, participated in putting the furnace into operation. After a campaign of 14 months the furnace superstructure was in good condition. In the middle of 1958 the second tank furnace of this type with slightly modified dimensions was put into operation in the same works (Figure 5). In conclusion, the authors state that these types warrant high technological qualities and optimum temperature- and gas conditions in the tank and in the processing part of the furnace. These furnaces also exhibit thermal and operational advantages. The limited dimensions of the melting tank and the resulting limited capacity (up to 80 t per day) are indicated as drawbacks of these furnaces. There are 5 figures. ✓

Card 2/2

MATYUSHCHENKO, D.D.

Modernization of models A163 and A164 two-stroke cold upsetters
with sectional dies. Kuz.-shtam.proisv. 3 no.7:37-41 JI '61.
(MIRA 14:6)

(Forging machinery)

MOCHALOV, V.A.; MATYUSHCHENKO, D.D.; KRIVITSKIY, A.A.; GLEZNR, G.N.;
OPARIN, I.M.; KHEYMAN, E.L.; SMETNEV, N.N.; EPSHTEYN, A.L.;
GUSEV, B.Ya.; LEYKIN, L.P.; MARCHENKO, G.M.; FISHKOV, V.G.;
SAPROVSKIY, S.V.; LYAKHOVSKIY, I.I.; SMELYAKOV, Ye.P.; VAYNTRAUB,
D.A.; BUDILIN, M.M.; NOTKIN, Ye.M.; KUR, G.Ye.; ARONSHTEYN, N.A.;
SUKHAREV, V.I.; VINOGRADOV, K.N.; BOBROVSKIY, N.S.

Innovators' certificates and patents. Mashinostroenie no. 2:
103-109 Mr-Ap '64. (MIRA 17:5)

MATYUSHCHENKO, Roza Yefremovna; DUNAYEV, F.F., doktor ekon. nauk,
prof., red.

[Ways to increase labor productivity in the petroleum
refining industry; based on the example of the Turkmen S.S.R.]
Puti povysheniia proizvoditel'nosti truda v neftepererabaty-
vaiushchei promyshlennosti; na primere Turkmenskoi SSR. Ash-
khabad, Turkmenskoe izd-vo, 1964. 93 p. (MIRA 18:4)

YAGUPOL'SKIY, L.M.; MATYUSHECHEVA, G.I.

Alkylbenzotrifluorides. Part 2: Polymethylbenzotrifluorides.
Zhur. ob. khim. 35 no.8:1422-1426 Ag '65. (MIRA 18:8)

1. Institut organicheskoy khimii AN UkrSSR.

MATYUSHENA, Z.V.

USSR/Pharmacology. Toxicology. Hormones.

V-8

Abs Jour : Ref Zhur-Biol., No 6, 1958, 28199.

Author : Matyushena Z. V.

Inst : Institute of Tuberculosis Academy of Medical
Sciences USSR.

Title : Application of the Adrenocorticotrophic Hormone
in a Tuberculosis Clinic.

Orig Pub : Tr. In-ta tuberkuleza, Akad. med. nauk SSSR,
1957, 9, 84-93.

Abstract : No abstract.

Card 1/1

MATTUSHENKO, A.N.; KHUMAYBERGENOV, M.D.

Characteristics of pastures on northern slopes of the Ketmen'
Range. Trudy Alma-At.bot.sada 5:83-92 '60. (MIRA 13:6)

(Ketmen' Range--Pastures and meadows)

RUBANIK, V.G.; LINCHEVSKIY, O.A.; MATYUSHENKO, A.N.; MEL'NIK, A.F.;
SOLONINOVA, I.N.; BRAILOVSKAYA, M.Ya., red.; OSTROVERKHOV,
A.P., red.; MUSHEGYAN, A.M., prof., doktor biol. nauk, red.; ROROKINA, Z.P.,
tekhn. red.

[Woody plants of the Alma-Ata Botanical Garden] Drevesnaia rastitel'nost' Alma-Atinskogo botanicheskogo sada. Pod red. A.M. Mushegiana. Alma-Ata, Izd-vo Akad. nauk Kazakhskoi SSR, 1962. 328 p. (MIRA 15:12)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Botanicheskiy sad.
(Alma-Ata—Woody plants)

MATYUSHENKO, A.N.

Specificity of the growth of Tien Shan spruce (*Picea schrenkiana*
Fisch. et Mey.) in the Alma-Ata Botanical Garden. Trudy Alma-
At. bot. sada 7:86-89 '63. (MIRA 16:10)

MATYUSHENKO, Boris Filippovich; ALEKSANDROVSKIY, A., red.; ZELENKOVA, Ye.,
tekh. red.

[Building machinery] Stroitel'nye mashiny. Kiev, Gos. izd-vo lit-
ry po stroit. i arkhitekt. USSR, 1961. 461 p. (MIRA 14:11)
(Building machinery)

MATYUSHENKO, Dem'yan Yakovlevich; MATYUSHENKO, Margarita Dem'yanovna;
VIRGINSKIY, V.S., retsenzent; KIBAL'CHICH, O.A., retsenzent;
PREOBRAZHENSKIY, V.I., red.; USENKO, L.A., tekhn. red.

[Moscow - the Crimea; railroad guide] Moskva - Krym; zheleznodorozhnyi putevoditel'. Moskva, Transzheldorizdat, 1962. 103 p.
(MIRA 15:12)

(Railroads—Guides)

MATYUSHENKO, Grigoriy Dmitriyevich [Matsiushenka, H.D.]; DUBANETSKIY, M.
[Dubianetski, M.], red.; VARENIKOVA, V. [Varienikava, V.] ,
tekhn. red.

[Postwar efforts of the communist Party of White Russia to
restore and develop White Russian industry, 1946-1950] Kamni-
stychnaia partyia Belarusi u barats'be za adnaulenne i razvits-
tse pramyaslovatsi u pasliavaenryia hady, 1946-1950. Minsk,
Dziarzh. vyd-va BSSR. Red. satsyial'na-ekan. lit-ry, 1962. 156 p.
(MIRA 15:11)

(White Russia--Economic conditions)

TESNER, P.A.; ROBINOVICH, Ye.Ya.; MATYUSHENKO, L.A.

Study of the black process during thermal decomposition of diluted
mixtures of hydrocarbons. Trudy VNIIGAZ no.12:27-41 '61.
(MIRA 15:1)
(Carbon black) (Hydrocarbons)

TESNER, P.A.; ROBINOVICH, Ye.Ya.; MATYUSHENKO, L.A.

Measuring the activation energy of the process of carbon formation
at high temperatures. Trudy VNIIGAZ no.12:49-55 '61.

(MIRA 15:1)

(Carbon)

TOLSTOPYATOVA, A.A.; BALADIN, A.A.; MATYUSHENKO, L.A.

Catalytic transformations of isopropyl alcohol and tetralin on
gallium oxide. Izv.AN SSSR.Sez.khim. no.2:258-262 F '64.

(MIRA 17:3)

1. Institut organicheskoy khimii im. N.D.Zelinskego AN SSSR.

KUZNETSOV, V.A.; MATYUSHENKO, L.A.; KAGANOVICH, R.I.

Adsorption of fluoro- and chloro-substituted acetic acids at
the solution/air and solution/mercury interfaces. Elektrokhimiia
1 no.3:369-373 Mr '65. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

MATYUSHENKO, Dem'yan Yakovlevich; MATYUSHENKO, Margarita Dem'yanovna;
VIRGINSKIY, V.S., retsenzents; KIBAL'CHICH, O.A., retsenzents;
PREOBRAZHENSKIY, V.I., red.; USENKO, L.A., tekhn. red.

[Moscow - the Crimea; railroad guide] Moskva - Krym; zheleznodorozhnyi putevoditel'. Moskva, Transzheldorizdat, 1962. 103 p.
(MIRA 15:12)

(Railroads--Guides)

S/737/61/000/000/010/010

AUTHORS: Braun, M. P., Doctor of Technical Sciences, Professor,
Vinokur, B. B., Matyushenko, N. I., Manuylova, V. P., Engineers.

TITLE: The effect of plastic deformation on the structure of heat-resisting steel
ЭИ 726 (EI 726).

SOURCE: Stal', sbornik statey. Ed. by A. M. Yampol'skiy, Moscow, 1961, 478-489.

TEXT: An investigation was made of the heat-resisting steel ЭИ 726 (EI 726) with the following % composition (B and Ce calculated): C 0.12, Mn 1.58, Si 0.59, Ni 16.97, Cr 15.09, W 2.00, Nb 1.31, S 0.018, P 0.018, B 0.025, Ce 0.02%. In austenitic steels heating and cooling does not produce any polymorphic transformations, and plastic deformation is one of the principal factors in controlling the grain size. Inasmuch as in actual production different portions of an ingot undergo deformation at different temperatures, it is advisable to investigate the plasticity of the metal at various descending temperatures. Tests were made by the upsetting method. The specimens were initially 30 mm dia and 60 mm high. The specimens were insulated with asbestos sheathing to minimize radiative losses during thermal upsetting. Upsetting of specimens heated to 1170°C was done step by step to 15, 30, 45, 60, and 75%; this was followed by water cooling. The furnace temperature was then reduced step by step to 1100, 1000, 900, and 800°C, and in each instance a batch of the specimens remaining in the furnace was subjected to upsetting, except for one control specimen which was water-cooled without any impact test. Microscopic in-

Card 1/3

The effect of plastic deformation...

S/737/61/000/000/010/010

specimen before and after aqua-regia etching reveals a growing coarseness consisting of a network of mutually intersecting 45° shear lines, accompanied by the formation of external "orange peel." Such coarseness attains a maximum at 45% deformation; at 60% deformation fissures begin to form (photographs are shown). At lower temperatures (900°) coarseness increases for a given % deformation, and fissures appear at 45%. At 800° , heavy coarseness appears at 30% deformation. The test specimens were axially sectioned, the section slices were etched electrolytically for 20 sec in concentrated HNO_3 at 0.3 a/cm^2 and were examined under the microscope. The impaired diffusion in the highly alloyed steel and the rapid deformation and subsequent water cooling slow down the recrystallization process; hence, the specimens evince a dendritic structure; the dendritic structure is increasingly distorted with increasing % deformation. The distribution of the nonuniform deformation was determined stereoscopically by Saltykov's method (no reference). Thus, in specimens having undergone a total deformation of 45%, the deformation in the surface layers of the facial plane was only 30%, at $1/6$ of the height 45%, and at the midpoint 66%. The dendrites near the faces, which are constrained by the friction with the impact tool, are deformed but little; at the midpoint the deformation (at temperatures up to 1170°) may be so complete that the structure becomes unidentifiable, except for a highly directional texture (photograph shown). At higher temperatures the dendrites are deformed considerably less; hence, the upsetting operation should not be terminated at high temperatures; on the other hand, the deformation

Card 2/3

The effect of plastic deformation...

S/737/61/000/000/010/010

should not be completed at lower temperatures, where the plasticity of the metal is reduced and the relaxation processes are so impaired that any subsequent heating may result in a collective recrystallization. A most uniform structure with grain sizes of between $4 \text{ and } 8 \cdot 10^{-3} \mu^2$ without disruption of the continuity of the metal are obtained by upsetting deformations of 30-45% at temperatures of 900-1000°C (photographs shown). Three-dimensional diagrams of grain size versus % deformation and temperature are shown. The effect of subsequent heating on the recrystallization of deformed specimens was investigated by holding them for 5 hours at 1080° and then water-quenching them. Electrolytic etching revealed new, smaller, polycrystalline grains and strong disintegration of the old, larger, dendritic grains. 15% deformation at 1170° may permit some growth of the grain; greater deformation at less than 1000° crushes the grain effectively. Heating after deformation evens out the grain size and eliminates any texture; however, the sectional size of the grains still depends on the size of the deformed dendrites. It is found and recommended that EI726 steel should be deformed by upsetting to an extent not to exceed 40% at temperatures not below 900°. There are 7 figures and 5 references (all Russian-language, of which 2 are Soviet and 3 appear to be Russian translations of Western books).

ASSOCIATION: Institut litseynogo proizvodstva AN USSR, Ukrainskaya akademiya s.-kh. nauk, Novokramatorskiy mashinostroitel'nyy zavod (Institute of Foundry Production AS UkrSSR, Ukrainian Academy of Agricultural Sciences, New Kramatorsk Machine-Building Factory).

Card 3/3

TIKHONOVSKAYA, L.D.; MATYUSHENKO, N.I.; BRAUN, M.P.

Effect of cerium and boron inoculation on the structure of cast
austenitic steel. Struk.i svois.lit.splav. no.1:54-59 '62.
(MIRA 15:5)
(Steel, Heat-resistant-Metallography) (Cerium) (Boron)

MATYUSHENKO, N.I.; MANUYLOVA, V.P.; VINOKUR, B.B.; BRAUN, M.P.

Recrystallization of EI726 cast heat-resistant steel. Struk.i
svois.lit.splav. no.1:125-128 '62. (MIRA 15:5)
(Steel castings) (Crystallization)

BRAUN, M.P., doktor tekhn.nauk; VINCHUR, B.B., inzh.; MATYUSHENKO, N.I.,
inzh.; MANUYLOVA, V.P., inzh.

Efficient conditions for shaping and heat treatment of heat-
resistant austenite steel. Mashinostroenie no.4:32-36 J1-Ag
'62. (MIRA 15:9)

1. Institut liteynogo proizvodstva AN UkrSSR.
(Steel--Heat treatment)

BRAUN, M. P. (Kiyev); MATYUSHENKO, N. I. (Kiyev)

Effect of niobium and zirconium on the structure of cast
austenitic steel. Izv. AN SSSR, Otd. tekhn. nauk, Met. i topl.
no.6:81-89 N-D '62. (MIRA 16:1)

(Chromium-nickel steel—Metallography)

BRAUN, Mikhail Petrovich; WINOKUR , Bertol'd Bentsionovich;
CHERNOVOL, Arkadiy Vasil'yevich; CHERNYI, Viktor
Gavrilovich; ALEKSANDROV, Anatoliy Grigor'yevich;
KOSTYRKO, Oleg Stepanovich; ALEKSANDROVA, Natal'ya
Pavlovna; IYASHENKO, Lyudmila Aleksandrovna;
MATYUSHENKO, Nelli Ivanovna; FIKSEN, N.V., kand. tekhn.
nauk, otv. red.; POKROVSKAYA, Z.S., red.; DAKHNO, Yu.B.,
tekhn. red.

[Structural and heat-resistant alloys] Konstruktsionnye
i zharoprochnye splavy. Kiev, Izd-vo AN USSR, 1963. 149 p.
(MIRA 17:3)

1. Akademiya nauk URSS, Kiev. Instytut lyvarnoho vyrob-
nytstva.

ACCESSION NR: AT4022209

S/0000/63/000/000/0131/0139

AUTHOR: Matyushenko, N. I.; Eraum, M. P.

TITLE: Effect of niobium and zirconium on the structure of cast austenitic steel

SOURCE: AN UkrRSR. Insty*tut ly*varnogo vy*robny*tstva. Konstruktsionny*ye i zharoprochny*ye splavy* (Structural and heat-resistant alloys). Kiev, Izd-vo AN UkrSSR, 1963, 131-139

TOPIC TAGS: austenitic steel, cast steel, steel, cast austenitic steel, niobium steel alloy, zirconium steel alloy, steel zirconium inoculation, steel niobium inoculation

ABSTRACT: Inoculation of alloys is currently receiving considerable attention due to the favorable effect of small amounts of alloying elements on physical properties. However, little has been done with cast alloys. The present paper investigates Zr and Nb inoculation of cast austenitic steel obtained by adding ferrotungsten to Cr-Ni steel in an induction furnace. The chemical composition was 0.07% C, 17.1% Ni, 14% Cr, and 3.88% W. As shown by photomicrographs in the original, the grain size decreases when up to 0.5% Nb is added, but then increases up to the initial dimensions on the further addition of Nb. The hardness changes in the same way as the grain size (up to 0.508% Nb). The rate of origination of crystallization centers can be expressed by (copy equation from p. 136)

Card 1/2

ACCESSION NR: AT4022209

where Q is the energy of activation, σ is the surface tension, T is the temperature in $^{\circ}K$ and K and B are constants. Laboratory studies showed that niobium is a surface active element which increases the adsorption effect. This, in turn, leads to fine grain crystallization. The generally similar results obtained with Zr indicate that Zr is a weaker surface active element. Both Zr and Nb can be used to produce a structure analogous to that seen in wrought steel. Orig. art. has: 2 illustrations and 1 table.

ASSOCIATION: Insty*tut ly*varnogo vy*robny*tstva AN UkrSSR (Institute of Foundry Technology, AN UkrSSR)

SUBMITTED: 00

DATE ACQ: 19Mar84

ENCL: 00

SUB CODE: ML

NO REF SOV: 016

OTHER: 002

Card 2/2

ACCESSION NR: AT4013953

S/2659/63/010/000/0207/0214

AUTHOR: Braun, M. P.; Tikhonovskaya, L. D.; Matyushenko, N. I.

TITLE: Effect of cerium and boron on the structure of cast austenitic steel

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam, v. 10, 1963, 207-214

TOPIC TAGS: steel, steel EI-695, alloy steel, cerium, boron, cast steel, cast steel structure, steel microhardness, steel carbide content, austenitic steel, tempered steel, aged steel, steel mechanical property

ABSTRACT: The authors report the results of studies on the structure and mechanical properties of cast austenitic steel EI-695 after modification with varying amounts of cerium and boron, and after tempering or aging. The alloys were prepared in a 0.5-kg high-frequency induction furnace. After casting, the steel was heated to 1150C for 10-20 hrs. and then quenched in water, followed by aging at 750C for 20 hours; X-ray analysis and tests of microhardness were performed at each stage. It was found that addition of cerium in amounts of only 0.01-0.03% disintegrated the dendritic structure of cast steel and produced a uniform microstructure, while larger amounts (0.1-0.3%) produced a grain structure similar to that of stressed steel. Boron had a similar effect, and the best results

Card 1/3

ACCESSION NR: AT4013953

were obtained with a combination of 0.3% Ce and 0.1% B. Studies of strength and plasticity showed that these were decreased by 0.3% B, although a maximal ultimate strength (85% of that of stressed steel) was obtained with 0.08-0.18% B. Addition of Ce (0.1-0.4%) increased the strength to 80%, the relative elongation to 150% and the relative compressibility to 85% of that in stressed steel. Studies of the carbide distribution in both tempered and untempered cast steel showed only a single NbC phase, regardless of modification, but the addition of Ce and especially of B had a marked effect on the crystal lattice of the solid solution and the distribution of the carbide. Cerium displaces the carbide from the grain boundary into the center of the grain, while boron facilitates its deposition along the grain boundaries. As shown in the Enclosure, the microhardness is almost the same in the center of the grain as along the boundary after addition of Ce, while B increases the microhardness in the border zone. Addition of very small amounts of B (0.005-0.05%) leads to very high microhardness in aged cast steel. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Institut metallurgii AN SSSR (Metallurgical Institute, AN SSSR)

SUBMITTED: 00

DATE ACQ: 27Feb64

ENCL: 01

SUB CODE: MM

NO REF SOV: 025

OTHER: 004

Card 2/3

ACCESSION NR: AT4013953

ENCLOSURE: 01

Variation in microhardness (kg/mm²) of steel in relation to the addition of modifiers and the type of treatment

Amt. of modifier in %	cast steel		tempered steel		aged steel	
	grain boundary	grain center	grain boundary	grain center	grain boundary	grain center
no addition	330	274	250	210	335	325
0,01 Co	247	229	240	208	360	383
0,03 Co	286	248	192	148	260	276
0,10 Co	290	265	180	220	284	285
0,30 Co	293	280	150	145	304	276
0,50 Co	342	318	265	220	364	325
0,01 B	308	282	246	108	344	380
0,10 B	238	307	232	284	208	303
0,30 B	225	230	225	213	308	253
0,02 Co+0,025 B	336	281	268	224	320	376
0,3 Co+0,1 B	303	258	250	200	331	339
0,5 Co+0,03 B	323	260	283	200	365	335

Card 3/3

VINOKUR, Bertol'd Bentsionovich; BRAUN, Mikhail Petrovich;
MATYUSHENKO, Nelli Ivanovna; TIKHONOVSKAYA, Larisa
Dmitriyevna; DRAYGOR, D.A., doktor tekhn. nauk, otv. red.

[Heat resistant steel; alloying, inoculation, and heat
treatment] Zharoprochnaia stal'; legirovanie, modifitsiro-
vanie i goriachaia obrabotka. Kiev, Naukova dumka, 1965.
265 p. (MFA 18:6)

1 26669-66 EWT(m) JD/JG

ACC NR: AP6010407

SOURCE CODE: UR/0126/66/021/003/0403/0408

AUTHORS: Matyushenko, N. I.; Rozen, A. A.; Sagalovich, V. V.

ORG: none

TITLE: Morphology and texture of molybdenum and tungsten carbonyl deposits

SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 3, 1966, 403-408

TOPIC TAGS: molybdenum, tungsten, metal deposition, x ray diffraction, temperature dependence, thermal decomposition

ABSTRACT: The morphology and textures of deposits obtained in thermal decomposition of molybdenum and tungsten carbonyls were studied over the temperature range from 150--1050C. The carbonyl specimens were prepared after the method of A. A. Rozen (Ukr. khim. zhurnal, 1959, 25, 735). X-ray diffraction patterns and particle size of the deposits, obtained at different temperatures of the deposition surface, were determined (see Fig. 1). It was found that there exist two morphological transition temperatures, at 250 and 750C and 350 and 800C for Mo and W respectively. The first transition temperature is related to the rupture of carbonyl molecule and the second to the condensation from supercooled liquid or, at higher temperature (i.e., $T > \Theta_2$), to the formation of crystal nuclei. The authors thank L. S. Palatnik for valuable advice and V. G. Yegorychev for assisting in the experimental work.

Card 1/2

UDC: 669.27/28

L 26669-66

ACC NR: AP6010407

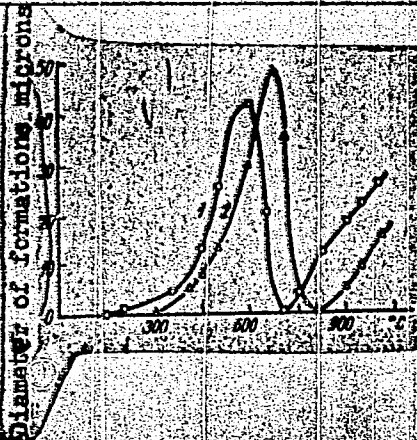


Fig. 1. Dependence of mean sizes of drop-like and crystal formations on the temperature of the deposition surface. 1 - molybdenum, 2 - tungsten.

Orig. art. has: 5 figures.

SUB CODE: 11,20/ SUBM DATE: 08Feb66/ ORIG REF: 007

Card 2/2 B.L.G

5.4110
15.2220

67665

SOV/126-8-6-13/24

AUTHORS: Matyushenko, N.N., Yefimenko, L.N. and Solopikhin, D.P.

TITLE: Existence of the Silicide W₃Si 1

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 8, Nr 6, pp 878-880 (USSR)

ABSTRACT: The authors point out that the question of the existence of W₃Si has not been settled (Ref 2,3) in spite of the considerable volume of published X-ray data on the silicides of high-melting VI group metals. The conversion of higher into lower molybdenum or tungsten silicides which occurs when the surface-silicided metals are heated to about 1700°C is accomplished with the participation of a chemical reaction governed by redistribution of s- and d-electrons in the metals. The authors give this reaction in terms of the number of molecules in the unit cell and using published (Ref 1) X-ray data, calculate the volume percentage of the phases (Table 1). From considerations of isomorphism the authors calculated the W₃Si lattice parameter $a = 4.910 \pm 0.01 \text{ \AA}$ and prepared specimens in which this phase could be observed metallographically and by X-ray diffraction. Tungsten (99% W) cylinders 20 mm in diameter were saturated to a depth of about

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67665

SOV/126-8-6-13/24

Existence of the Silicide W_3Si

100 microns, with silicon (99% Si) in a neutral atmosphere to give two phases: WSi_2 and W_5Si_3 (Fig 1). On heating to $1700^\circ C$ in air W_3Si was found at the W/W_5Si_3 boundary (Fig 2), from which a diffraction pattern (Fig 3) was obtained. This phase had a texture due to that of the tungsten. The authors compare (Table 2) the experimental and calculated crystallographic values for W_3Si . The lattice parameter was found to be $a = 4.910 \pm 0.005 \text{ \AA}$, the X-ray density $d = 16.2 \text{ g/cm}^3$. There are 3 figures, 2 tables and 3 references, 2 of which are Soviet and 1 English.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR
(Physico-Technical Institute, AS UkrSSR)

SUBMITTED: June 26, 1959

Card 2/2

MATYUSHENKO, N.N.

Volumes of the elementary cells of beryllides as a function of the
atomic volumes of the components. Kristallografiia 7 no.5:701-703
S-0 '62. (MIRA 15:12)
(Beryllium salts) (Crystallography)

S/070/62/007/006/005/020
E132/E435

AUTHORS: Matyushenko, N.N., Verkhorobin, L.F., Pugachev, N.S.,
Sivokon', N.V.

TITLE: The crystal structures of the higher beryllides of
molybdenum, tungsten and rhenium

PERIODICAL: Kristallografiya, v.7, no.6, 1962, 862-864

TEXT: The highest beryllides of Mo, W and Re were made by
allowing refined beryllium to diffuse at above 1100°C into these
metals until saturation was reached. Sectioning a foil
incompletely saturated showed distinct layers corresponding to
Mo-MoBe₂-MoBe₁₂-MoBe₂₂. A foil of Mo, 0.2 mm thick, was
completely saturated. X-ray powder photographs were taken
(spacings tabulated) and corresponded to a cubic structure with
 $a = 11.63$ (Mo), 11.63 (W) and $11.54 \text{ \AA}$ (Re). Chemical analysis
gave a formula MoBe₂₂. A structure with the space group
 $O_7 = Fd\bar{3}m$ was proposed having 8Mo in (b), 16Be in (c), 16Be
in (d), 48Be in (f) and 96Be in (h) positions. Observed and
calculated structure factors were compared for the assumed
parameters x (Be in f) = 0.125 and x (Be in h) = 0. After
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The crystal structures ...

S/070/62/007/006/005/020
E132/E435

the study it was found that the structure was like that of $ZrZn_{22}$ (Sten Samson. Acta crystallogr., v.14, no.12, 1961, 1229). The volume of the unit cell is substantially identical with the sum of the volumes of the component metals. There are 1 figure and 2 tables.

ASSOCIATION: Fiziko-tehnicheskii institut AN UkrSSR
(Physicotechnical Institute AS UkrSSR)

SUBMITTED: November 28, 1961

Card 2/2

S/126/62/013/001/006/018
E021/E580

AUTHORS: Verkhorobin, L.F., Ivanov, V.Ye., Matyushenko, N.N.,
Nechiporenko, Ye.P., Pugachev, N.S. and Somov, A.I.

TITLE: Diffusion reactions in the Mo-Si, W-Si and Ta-Si
systems

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.1, 1962,
77-81

TEXT: The processes occurring during the saturation of
molybdenum, tungsten and tantalum by silicon on thermal diffusion
were studied. Metallic samples were heated in silicon powder in
a vacuum of 10^{-5} mm mercury in the range 1150-1350°C. The
silicide layer, formed on the surface of the metals, was examined
by metallographic and X-ray analysis. The results showed that the
saturated layer was produced, in the main, through the vapour
phase. The first stage was the formation of lower silicides.
Afterwards, higher silicides are formed. At 1240°C, the
disilicide appears after 0.5, 1 and 3 hours on W, Ta and Mo,
respectively. Once the disilicide has appeared, further growth
occurs largely by this phase, and only after a definite thickness
has been attained is there a retardation in growth of disilicide
Card 1/2

Diffusion reactions in the ...

S/126/62/013/001/006/018
EO21/E580

and increased growth in the layers of lower silicide. It was shown from X-ray analysis and from the change in form of the samples during diffusion that preferential diffusion of silicon through the silicide layer occurred, and the reaction leading to the formation of the phase takes place mainly at the internal boundary of the layer. There are 5 figures and 2 tables.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
(Physico-technical Institute AS UkrSSR)

SUBMITTED: April 25, 1961

Card 2/2

S/032/62/028/010/009/009
B117/B186

AUTHORS: Matyushenko, N. N., Kunchenko, V. V., and Verkhorobin, L. P.

TITLE: High-temperature vacuum chamber for back reflection X-ray photography

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 10, 1962, 1257 - 1259

TEXT: The authors designed a vacuum chamber for precision X-ray photography of interplanar spacings and for the measurement of electric resistance in crystal lattices of high-melting metals and alloys at temperatures ranging from room temperature up to 2000°C. The apparatus can also be used for detecting phase transition points, determining coefficients of linear expansion and observing recrystallization processes in fixed samples. The vacuum chamber comprises a cylindrical hollow water-cooled casing (height - 60 mm, inner diameter - 120 mm) fastened to a hollow support which is connected to the pumping system. Oscillations in the plane perpendicular to the X-ray beam are imparted by a worm gear driven by a three-phase motor through reduction gear. The sample (maximum length 100 mm) is fixed between two water-cooled brass electrodes which are sealed

Card 1/3

High-temperature vacuum chamber...

S/032/62/028/010/009/009
B117/B186

by rubber packings. The sample is heated by an a-c current from a step-down transformer with an accuracy of $\pm 1\%$ for the stabilized voltage at the input. Inlets for thermocouples and electric measurement units are at right angles to the axes of the electrodes. Temperature is measured by an optical pyrometer, type ОППМ-09 (OPPI-09), through a viewing window provided with a shutter. Precision at 2000°C is not inferior to 2% . Opposite the viewing window a second window, for taking X-ray pictures, is fixed in the cover of the casing. This window can be closed by 0.3-mm thick beryllium foil which is protected from heat radiation and dust by a second Be shield, not thicker than 0.1 mm . The X-ray unit comprises a flat multi-frame film badge and a sharp-focused tube designed by B. Ya. Pines and V. S. Kogan. When altering the distance specimen - film from 50 to 300 mm , Braggs angles of from 67 to 88° can be recorded. The chamber was used to investigate the interplanar spacing (130) of a molybdenum specimen, measuring $100.8.2\text{ mm}$, within a temperature range of from 900 to 2000°C . The vacuum chamber sustained the long period of heating at 2000°C without any disturbance of the vacuum (5.10^{-5} mm Hg). The electric resistance could be measured from 900°C upward with an accuracy of $\pm 3\%$. X-ray pictures were taken by using the characteristic K_{α} radiation of the Fe plate, focusing

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